

PATENT COOPERATION TREATY

REC'D 05 JAN 2005

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From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/IL2004/000707

International filing date (day/month/year)
02.08.2004

Priority date (day/month/year)
04.03.2004

International Patent Classification (IPC) or both national classification and IPC
G02B5/30, G02B27/28

Applicant
NOVA MEASURING INSTRUMENTS LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for International preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IL2004/000707

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IL2004/000707

Box No. II Priority

1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. ☐ It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
4. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-21
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-21
Industrial applicability (IA)	Yes: Claims	1-21
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

- D1: APPEL R ET AL: "Design of a broadband UV-visible [alpha]-barium borate polarizer" APPLIED OPTICS OPT. SOC. AMERICA USA, vol. 41, no. 13, 2002, pages 2470-2480, XP002311144 ISSN: 0003-6935
- D2: US 2002/105995 A1
- D3: JP 7 005307 A
- D4: JP 9 178940 A
- D5: US 2002/034457 A1
- D6: US-A-4 740 947

2. The application lacks clarity as required by Article 6 PCT for the following reasons:

- 2.1 Although claims 1, 15, 16, 17 and method claims 18-20 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter. The aforementioned claims therefore lack conciseness. Moreover, lack of clarity of the claims as a whole arises, since the plurality of independent claims makes it difficult, if not impossible, to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection.

Hence, the current set of claims does not meet the requirements of Article 6 PCT.

- 2.2 It is not clear in claim 1 which structural feature of the polarizer device is defined by the reference to "matching said dispersion profiles.... so that an "effect of total internal reflection". In particular, the occurrence of "total internal reflection" depends on the angle of incidence of light and the exact geometry of the polarizer device. Since corresponding features are not defined in the claim, the passage cited above referring to an "effect of total internal reflection" is not limiting the scope of claim 1.

It is further noted, that even if the wording of claim 1 is considered to be clear, lines 2-7 of the claim do not go beyond the known definition of a Glan-Thompson prism.

Furthermore, there are no structural features defined in the claim by which the desired operation of the prism at 190 nm is achieved. Thus, claim 1 lacks essential features.

A corresponding remark applies to the other independent claims.

- 2.3 Lines 5-7 of present claim 17 appear to relate to (a part of) another (independent) claim. Since it is not clear, whether this passage actually belongs to claim 17 or has been erroneously added, it is not taken into consideration for the examination of claim 17.
- 2.4 Since the wording of independent claims 19 and 20 is identical, claim 20 is redundant.
- 2.5 The reference to the trademark "CV15-2500" in claim 8 is unclear, because it is not guaranteed that the product referred to is not modified while maintaining its name.
- 2.6 It is not clear in claim 5, which structural features of a binding material are defined by the reference to a "two-part" material.
3. Insofar as clear, the present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1 and 18 does not involve an inventive step in the sense of Article 33(3) PCT.
- 3.1 As mentioned in section 2.2 above, the structural features of present claim 1 define a well known Glan-Thompson prism (see D1).

In addition, claim 1 expresses the wish that the prism is operable at about 190 nm without defining how the desired result is achieved. However, this wish is also known from D1 (see page 2472, left hand column).

The mere specification of a desired product cannot be considered as being inventive.

In a similar way, the subject matter of method claim 18 lacks an inventive step.

- 3.2 Glan Thompson-Polarizers for the deep UV spectral range (157 nm) are also known from D2 (see par. 5, 78).
- 3.3 A similar reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent claims 15-17, 19, 20 which therefore are also considered not to be inventive.
4. Dependent claims 2-14 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step.
- claim 2: alpha-BBO is a well known material for Glan-Thompson prisms (see for example D1, section 1).
- claim 3: determination of the cut angle of the prisms is a matter of a normal design procedure for the skilled person; cut angles between 30° and 40° are common in the art (see also D1, figure 8).
- claims 4-9: the specified properties of the binding material are generally used parameters/materials which are not related to unexpected effects. In particular, it is known to use silicone materials as adhesives for prisms (see D3-D5)
- claims 10, 11: the use of beads for controlling the thickness uniformity of adhesive layers in optical devices is well known in the art (see D6)
- claims 12-14, 21: the exterior shape of the prisms appears to be a normal design option which is not related to unexpected effects